

(12) **UK Patent Application** (19) **GB** (11) **2 244 206 A**  
 (43) Date of A publication 27.11.1991

(21) Application No 9011571.8

(22) Date of filing 23.05.1990

(71) Applicant  
**Sun Hing Audio Equipment Mfy Ltd**  
 (Incorporated in Hong Kong)  
 Cheung Lung Industrial Building, 10th Floor, Cheung  
 Lai Street, Cheung Sha Wan, Kowloon, Hong Kong

(72) Inventor  
**Chow Yun Sheung**

(74) Agent and/or Address for Service  
**Carpmaels & Ransford**  
 43 Bloomsbury Square, London, WC1A 2RA,  
 United Kingdom

(51) INT CL<sup>\*</sup>  
**A47B 81/00**

(52) UK CL (Edition K)  
**A4B B9B16 B9F5**

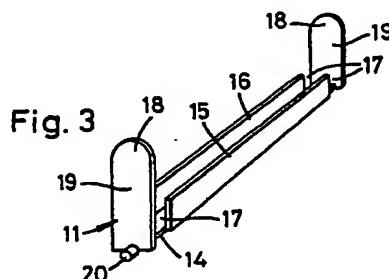
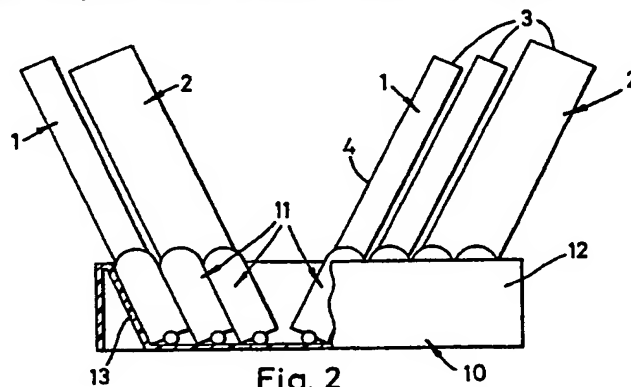
(56) Documents cited  
 None

(58) Field of search  
 UK CL (Edition K) A4B  
 INT CL<sup>\*</sup> A47B

(54) **A compact disc storage rack**

(57) The invention relates to a CD storage rack of the flipper type capable of accommodating both single 1 and double 2 CD cases comprising a tray 10 and a plurality of pivotable members 11 mounted transversely therein for pivotal motion about transverse axes between a forwardly inclined and a rearwardly inclined position. Each pivotable member 11 comprises a base plate 14 and two side walls 15, 16 defining a space for receiving a CD case, the base plate extending beyond both ends of at least one of the said side walls.

Preferably, the side walls of adjacent pivotable members include cut away portions such that they may overlap when in an inclined position.



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

GB 2 244 206 A

1/5

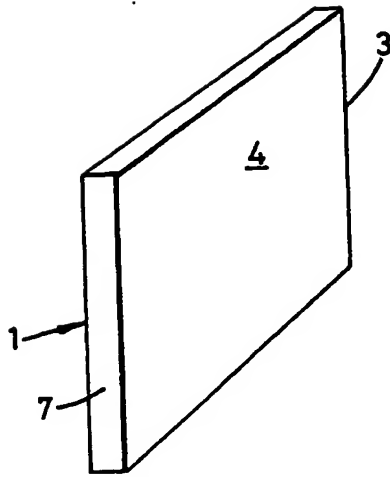


Fig. 1a

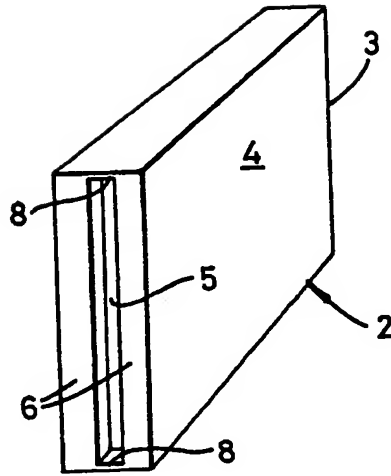


Fig. 1b

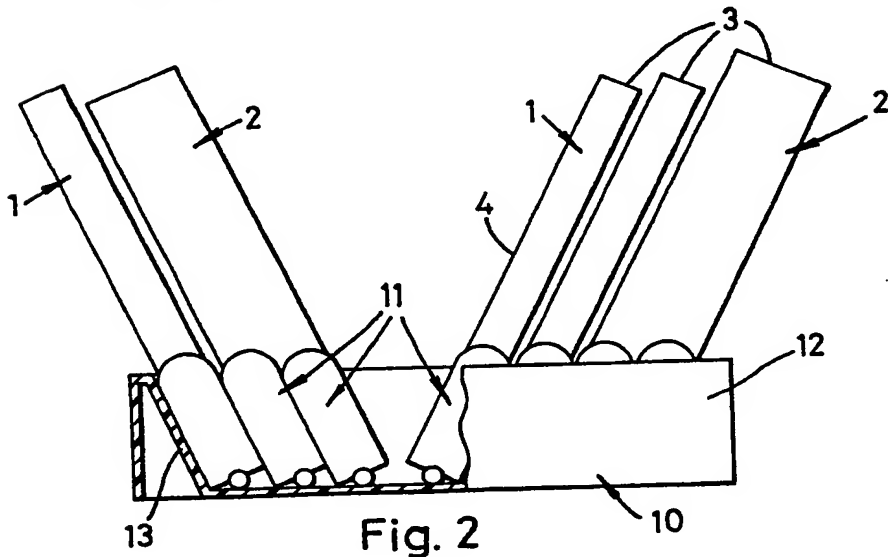


Fig. 2

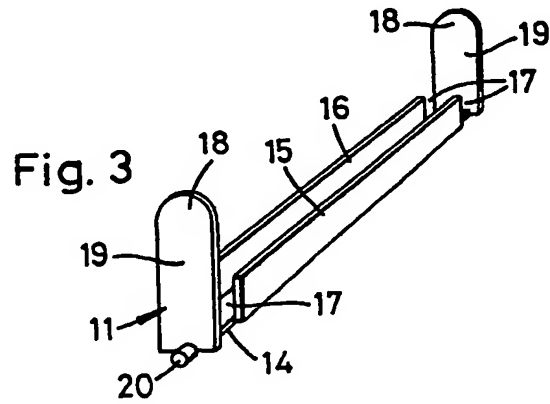


Fig. 3

2/5

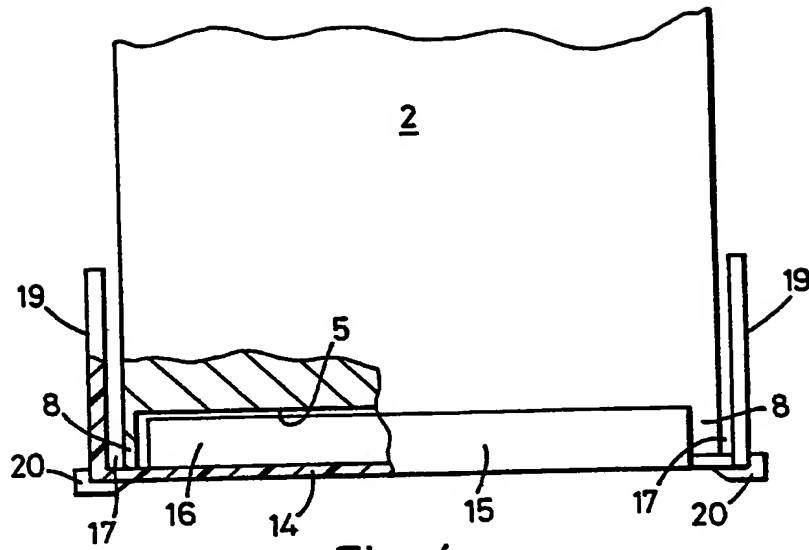


Fig. 4

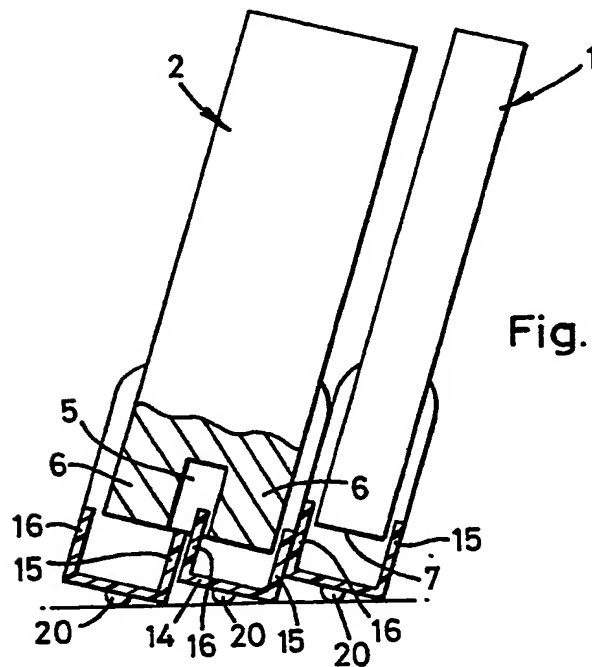


Fig. 5

3/5

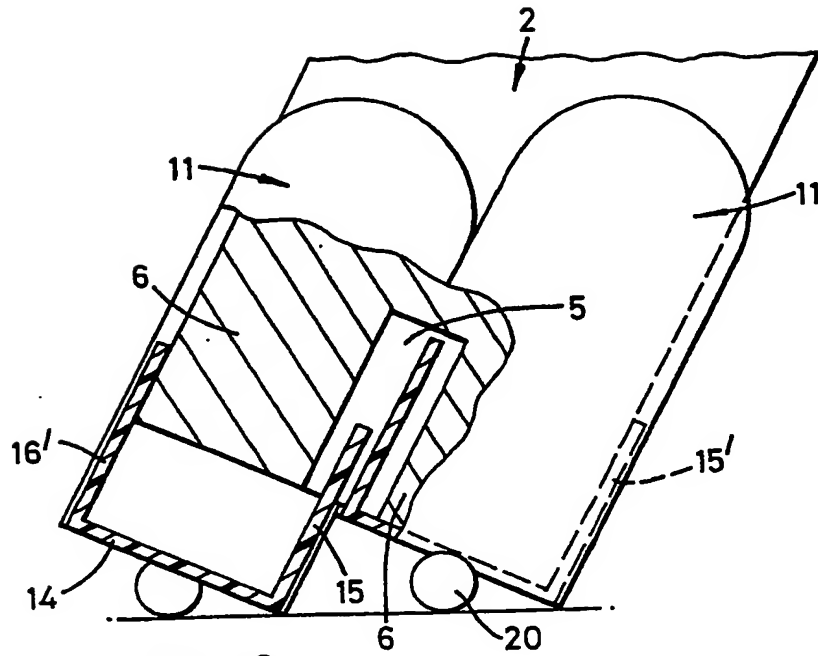


Fig. 6

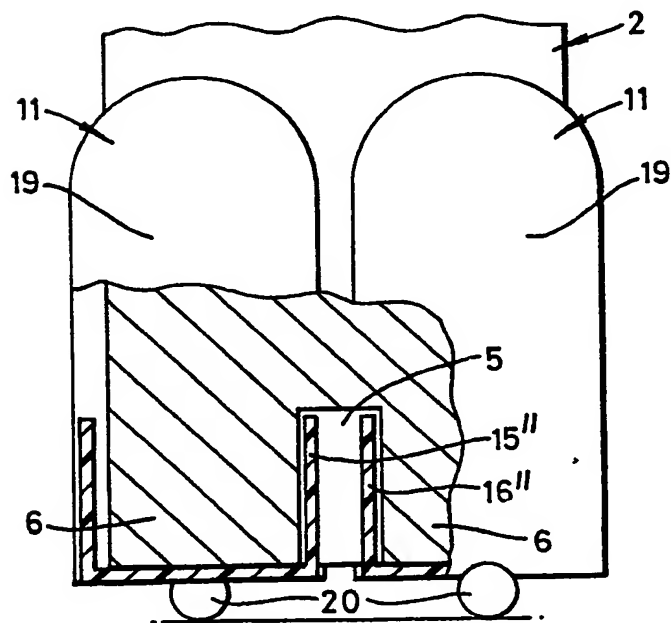
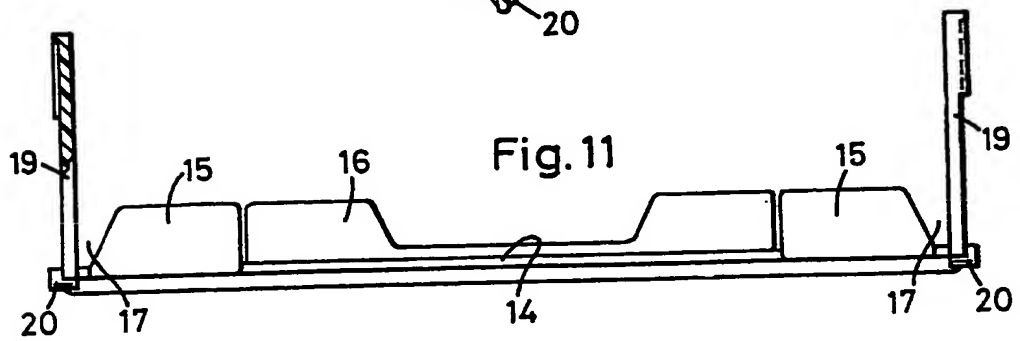
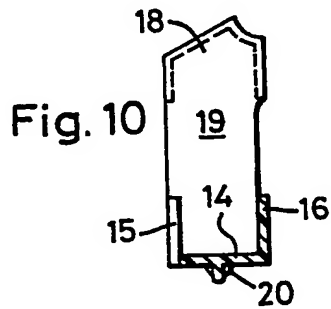
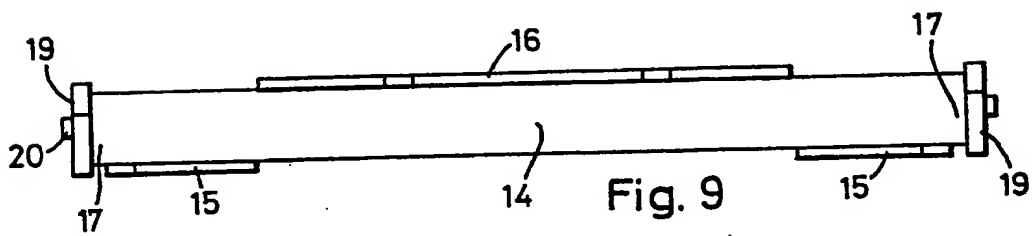
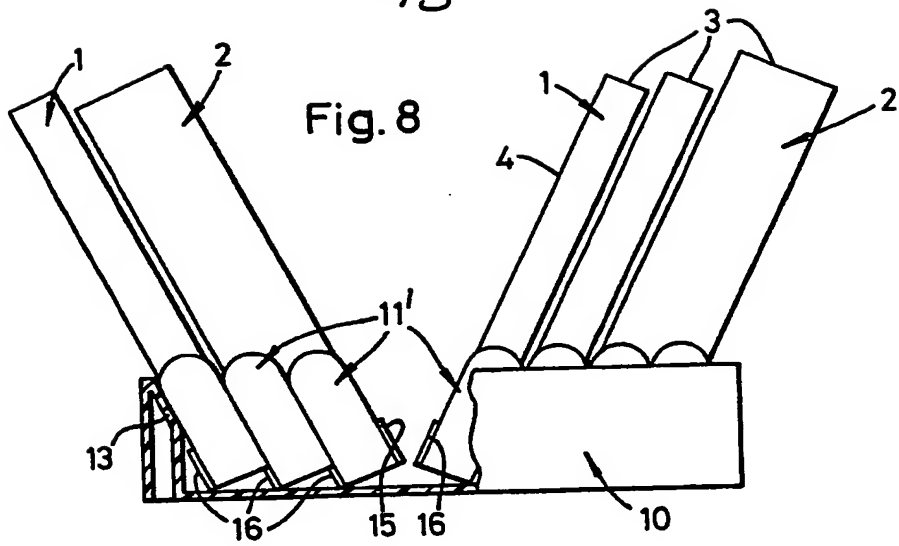


Fig. 7

4/5



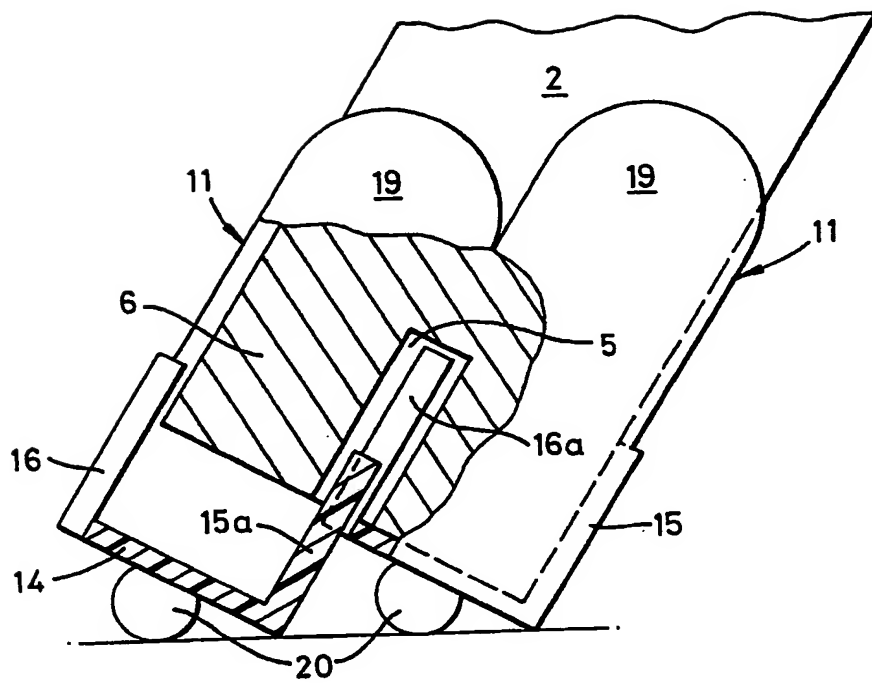


Fig. 12

### A Compact Disc Storage Rack

This invention relates to storage racks for compact discs and in particular to racks comprising a tray and a plurality  
5 of pivotable members mounted therein, each of which may hold a compact disc. Such racks are particularly convenient since the compact discs may be flipped through, in much the same way as cards in a card-index system, and an appropriate selection made.

10 With the recent growth in popularity of the compact disc (CD), many racks of the type described above, hereinafter "flipper racks", have appeared on the market. A typical  
15 flipper rack comprises a tray and a plurality of pivotable members mounted therein for pivotal motion about axes transverse to the tray, each pivotable member including a base, first and second end plates and first and second side walls defining a box-like structure for receiving a CD case.  
Typically, the end plates of each pivotable member are  
20 extended upwards to form levers for flipping the pivotable member about its pivotal axis.

A major disadvantage of known flipper racks, however, is that they are only capable of holding single CD cases and  
25 the consumer is therefore unable to store his double CD cases in a flipper rack and must seek another solution to the problem of storing and conveniently selecting from his double CDs.

30 This invention seeks to present a solution to the above problem in that a flipper rack is provided which is capable of accommodating both single and double CD cases.

Thus, according to the invention there is provided a storage  
35 rack for single and double CD cases comprising a tray, with respect to which are defined a transverse and a longitudinal direction, and a plurality of elongate pivotable members, each mounted transversely therein for pivotal motion about

an axis transverse to the tray and including a base plate and first and second side walls defining a space for receiving a CD case, characterised in that the said base plate projects beyond both ends of at least one of the said side walls. Advantageously, the said base plate projects  
5 beyond both ends of each of the said side walls.

Preferably, each pivotable member also includes first and second upstanding end plates adjacent either end of the base plate. One or both of the said end plates may comprise a  
10 lever operable to pivot the said pivotable member about its axis. Preferably, the lever consists of a shaped portion of the end plate remote from the base plate, which portion may be provided with serrations to improve the grip between the  
15 lever and a user's fingers.

It is preferred that the spacings between the pivot axes of adjacent pivotable members are substantially equal.

20 In a preferred embodiment of the invention, the side walls of the pivotable members include cut away portions, with the remaining portions of the first and second side wall of one pivotable member corresponding respectively to cut away portions of the second and first side wall of the nearer  
25 adjacent pivotable member.

Normally, the tray comprises a base having first and second lateral walls transversely opposing one another and between which the pivotable members are located. The pivotable  
30 members may include a peg projecting from each end for engagement with holes or recesses in the lateral walls.

Preferably, the tray also includes front and rear inclined walls respectively for supporting the front and rear  
35 pivotable members.

The storage rack according to this invention, along with the manner in which it may be used for storing both single and



double CD cases will now be described with reference to the drawings in which:

fig. 1a is a schematic representation of a single CD case;

5 fig. 1b is a schematic representation of a double CD case;

fig. 2 is a cut away illustration of a first embodiment of a storage rack according to the invention, containing both single and double CD cases;

10 fig. 3 illustrates a first embodiment of a pivotable member according to the invention;

figs. 4-7 schematically illustrate a double CD case held in the rack of fig. 2;

fig. 8 shows a second embodiment of a storage rack according to the invention;

15 figs. 9-11 show a pivotable member of the rack of fig. 8; and

fig. 12 schematically illustrates a double CD case held in the rack of fig. 8.

20

Figs. 1a and 1b respectively illustrate a single (1) and a double (2) CD case. Each case has a side label (3) and a front cover (4). The double CD case (2) has a slot (5) at its end remote from the side label (3), which divides the end into two bars (6) of substantially the same width as the end (7) of a single CD case. At each end of the slot (5) is an end wall (8).

25

Referring now to fig. 2, there is shown a storage rack according to the present invention comprising a tray (10) and a plurality of elongate pivotable members (11) each mounted transversely therein for pivotal motion about an axis transverse to the tray. In the particular embodiment shown in fig. 2, the tray (10) includes lateral walls (12) and front (13) and rear (not shown) inclined walls. The front inclined wall (13) is shown supporting the first pivotable member, and the storage rack is illustrated as holding a variety of single (1) and double (2) CD cases.

30

35

The first embodiment of a pivotable member (11) according to the invention is shown in fig. 3 and comprises a base plate (14) and first (15) and second (16) side walls. As can be seen from the figure, the base plate (14) projects beyond both ends of each of the side walls (15, 16), and therefore defines a gap (17) at each end of each side wall (15, 16). The pivotable member of fig. 3 also includes first and second upstanding end plates (19), both of which include a rounded portion (18) forming a lever operable to pivot the member about its axis, and a peg (20) projecting from each end for pivotal engagement with a hole or recess in a lateral wall (12) of the tray (10).

When used to store a single CD case (1), the side walls (15, 16) and base plate (14) of the pivotable member of fig. 3 define a space for receiving an end (7) of the case (1), as is customary in flipper type CD racks.

Fig. 4 and 5 respectively show a front and side view of a double CD case (2) held in the rack of fig. 2. As can be seen from fig. 4, the end wall (8) of the slot (5) in the double CD case (2) locates in the gap (17) between the side walls (15; 16) and the end plates (19) of two adjacent pivotable members (11). In this way, each of the bars (6) of the double CD case (2) is retained in much the same way as a single CD case (1). This is shown in fig. 5.

Fig. 6 and 7 show side views of a double CD case (2) held in the rack of fig. 2 in an inclined position and an upright position respectively. As the angle of inclination shown in fig. 6 is that at which the end plates (19) of adjacent pivotable members (11) become contiguous then it can be seen that the perpendicular distance between the inner surfaces of the two outermost side walls (15', 16') must be equal to at least the maximum width of a double CD case (2).

Similarly, from fig. 7 it can be seen that the perpendicular distance between the outer surfaces of the two innermost

side walls (15", 16") must be, in the upright position, equal to at most the minimum width of the slot (5).

5 In the case where gaps (17) are provided in only one side wall (15, 16) of each pivotal member (11), the pivotal members (11) are alternately arranged in such a way that adjacent side walls (15; 16) of adjacent pivotal members (11) are either both provided with gaps (17) or both free of gaps. In this way, double CD cases (2) may still be  
10 accommodated, but only in half as many positions.

Fig. 8 shows a second and preferred, embodiment of a storage rack according to the invention. Similar parts in figs. 2 and 8 are designated with the same reference numerals.

15 The principal difference between the second and first embodiments of the rack is that the side walls (15, 16) of the second embodiment include cut away portions with the remaining portions of the first (15) and second (16) side  
20 walls of one pivotable member corresponding respectively with cut away portions of the second (16) and first (15) side walls of the nearer adjacent pivotable member. This allows the side walls (15, 16) of adjacent pivotable members to overlap when in an inclined position which relaxes the  
25 constraints mentioned above in relation to the dimensions of the first embodiment of the rack.

Figs. 9, 10 and 11 respectively show plan, end and side views of the second embodiment of a pivotable member (11')  
30 according to the invention. As can be seen, the side walls (15, 16) include cut away portions, with the remaining portions of the first side wall (15) corresponding to the cut away portions of the second side wall (16), and vice versa.

35 Fig. 12 shows a side view of a double CD case (2) when held in an inclined position in the second embodiment of a rack according to the invention. The two innermost side walls

(15a, 16a) can clearly be seen overlapping one another.

It will, of course, be understood that the present invention  
has been described above purely by way of example, and that  
5 modifications of detail may be made without departing from  
the scope of the invention as defined by the claims.

10

15

20

25

30

35

**CLAIMS:**

1. A storage rack for CD cases comprising a tray, with respect to which are defined a transverse and a longitudinal  
5 direction, and a plurality of elongate pivotable members, each mounted transversely therein for pivotal motion about an axis transverse to the tray and including a base plate and first and second side walls defining a space for receiving a CD case, characterised in that the said base  
10 plate extends beyond both ends of at least one of the said side walls.
2. A rack according to claim 1 wherein the said base plate extends beyond both ends of each of the said side walls.
- 15 3. A rack according to claim 1 or claim 2, wherein each pivotable member further includes first and second upstanding end plates adjacent either end of the base plate.
- 20 4. A rack according to claim 3 wherein at least one of the said end plates includes a lever operable to pivot the pivotable member about its axis.
5. A rack according to claim 4 wherein the lever consists  
25 of a shaped portion of the end plate, remote from the base plate.
6. A rack according to any preceding claim wherein the spacings between the pivot axes of adjacent pivotable  
30 members are substantially equal.
7. A rack according to any preceding claim wherein the side walls of the pivotable members include cut away portions, with the remaining portions of the first and second side  
35 walls of one pivotable member corresponding respectively to the cut away portions of the second and first side wall of the nearer adjacent pivotable member.

8. A rack according to any preceding claim wherein the tray comprises a base having first and second lateral walls transversely opposing one another and between which the pivotable members are located.

5

9. A rack according to claim 8 wherein the pivotable members include a peg projecting from each end for engagement with holes or recesses in the lateral walls.

10 10. A rack according to any preceding claim wherein the tray further includes front and rear inclined walls respectively for supporting the front and rear pivotable members.

15 11. A storage rack for CD cases substantially as hereinbefore described with reference to any one of figs. 2-12 of the accompanying drawings.

20

25

30

35